



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 8

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REF: 8EPR-ER

PROGRESS POLLUTION REPORT

LIBBY ASBESTOS

Libby, Lincoln County, Montana

I. HEADING

Date: May 22, 2001
Site Name: Libby Asbestos (Export & Screening Plants)
From: Paul Peronard, OSC
Duc Nguyen, OSC
To: Patty Smith, EPA Headquarters
POLREP No.: #3

II. BACKGROUND

Site No.: BC
Response Authority: CERCLA
CERCLIS No: MT0009083840
NPL Status: NA
Action Memorandum Status: Approved 5/23/00
Start Date : 6/01/00
Demobilization Date: TBD
Completion Date: TBD

III. SITE INFORMATION

A. Incident Category

Time Critical, Fund-Lead and PRP-Lead

B. Site Description (Please see the initial POLREP)

1. Site Location

The Site is located in Montana within Sections 3 and 10, T.30N., R.31W. of the Libby Quadrangle in the County of Lincoln.

2. Description of Threat (Please see the initial POLREP)



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C. Preliminary Assessment/Site Inspection Results

The Removal Action authorized by the Action Memorandum dated May 23, 2000 was approved to address the threats posed by high levels of amphibole asbestos at the Screening Plant including the Kootenai Development Company (KDC) Properties (EPA-lead) and The Export Plant (PRP-lead). **During the course of the removal, W.R. Grace denied access to the mine for repository and to the KDC properties for the cleanup, which resulted in 90,000 cubic yards of contaminated soil being currently stockpiled at the Screening Plant and KDC properties and which still need to be cleaned up. Additionally, subsequent sampling has identified high levels of amphibole asbestos in homes, Libby schools, and other affected areas that require time-critical removal actions:**

- **Schools:** *On February 8, 2001, the Superintendent of Libby Schools requested EPA's help in testing and possibly removing the high school and middle school running tracks. Preliminary results from the investigation conducted in March 2001 show: 3-5% by PLM of amphibole asbestos concentration in the subsurface vermiculite ore tailings of the running tracks (Libby High School and Libby Middle School), 2% by PLM in the ice skating rink at the Plummer Elementary School. EPA also learned that this materials may have been used in other areas in Libby. Therefore, the scope of the investigation has been expanded to include other elementary schools, middle schools, city parks, golf courses, and daycare centers in the Libby area.*
- **Residential Areas:** *Several residences have been found either with unexpanded vermiculite in piles or mixed in the sodded areas outside their homes (2-5% asbestos by PLM). One residence of approximately 5-acres consists of a home, two 80-foot long buildings storing asbestos-contaminated equipment that once was used at the mine and processing areas, and one 40-foot long metal shop constructed with sluice pipes that also were used at the mine.*
- **The Rainey Creek Road:** *This road was used to transport the vermiculite ore from the Zonolite mine to the processing facilities. It was built with material from gravel pits; but sand materials (Pyroxene) containing asbestos, that were used to sand the road in the winter, were imported from the vermiculite mine. The road is contaminated with significant asbestos levels ranging from non-detect to greater than 5% by PLM and generates significant airborne concentrations of asbestos, even with normal traffic activities, if no dust suppression is implemented. The 6-mile road is being used for recreation and a hauling route for logging company. It is owned by several entities: Lincoln County owns from its intersection with Highway 37 to the lower pond; W.R. Grace owns from the lower pond to Jackson Creek; and the US Forest Service owns after Jackson Creek.*

IV. RESPONSE INFORMATION

A. Situation

1. Current situation/removal actions to date:

The Export Plant: (See previous POLREPs for background information)

All amphibole asbestos contaminated soil has been removed. Five buildings on-site were initially decontaminated, but were subsequently re-sampled by EPA in February of 2001, showing that high levels of contamination still remain in the encapsulated areas (i.e. window base, wood joints, etc.). Originally, W.R. Grace chose decontamination of those buildings rather than demolition. A dispute relating to the restoration phase of the decontaminated buildings is still unresolved. The contention is that when W.R. Grace decontaminated the buildings by removing the interior walls and wooden floors in conjunction with building previous deterioration, it made those buildings structurally unsound - resulting in a very high cost for restoration. W.R. Grace has agreed to demolish 4 out of 5 buildings and is negotiating with the City of Libby (owner of the Export Plant) to restore the remaining Planner building. Soil restoration to its original grade was completed in April 2001.

The Screening Plant: *Because significantly elevated amphibole asbestos concentrations have been found along the Kootenai River's bank of the Raintree Nursery, EPA has decided to excavate the entire asbestos-contaminated bank where the various sizes of vermiculite ore containing amphibole asbestos were conveyed across the river into the train cars in the past. Contaminated soil in the long shed will be removed by June 29. The longshed and its components also will be dismantled and hauled to the mine. The hauling of 90,000 cubic yards of asbestos contaminated soil and debris to the mine was beginning on May 18, 2001. The draft restoration plan for the site has been revised and will be resubmitted to the Parkers (owners) for a final review in June of 2001.*

The Rainy Creek Road: *On May 1, 2001, in conjunction with USFS and the Lincoln County, the entire road was temporary closed to the public from Highway 37 to the edge of the W.R. Grace's property and watered for dust suppression. On May 11, 2001, the first half-mile of the road from Highway 37 was paved with asphalt to prevent the surface asbestos-contaminated soil from becoming airborne. A Decontamination Station also was installed at the half-mile mark to decontaminate the soil hauling trucks as they come down from the mine.*

Schools: *Since high levels of asbestos contamination were found at the Libby High School, Libby Middle School, and Plummer Elementary School, the investigation scope has been expanded to other schools (Asa Wood and McGrade*

Elementary Schools), City parks (Fireman's Park and Lincoln Playground), and St. John Day Care Center in Libby. New findings will be provided when the analytical results are completed. At the Community Advisor Group meeting on April 26, EPA told the Libby community that the cleanup of these schools is now a top priority and made a commitment to begin removal activities after school is out for the summer. A brief summary of schools that have been sampled, follows:

- **Plummer Elementary School:** *Asbestos concentrations were found in the surface soil $\geq 5\%$ and in the subsurface $\geq 1\%$. Asbestos was also found on and below the surface of the ice skating rink. Because the school year is still in progress, the ice skating rink has been temporary covered with a tarp & 4 inches of sand and fenced off to prevent any potential exposure.*
- **Libby High School:** *Asbestos was initially found in the subsurface at a depth of 2-6 inches with asbestos concentration ranging from 3-8% by weight underneath the capped running track. The interior inspections and review of all previous AHERA (Asbestos Hazard Emergency Response Act) inspection documents showed no asbestos inside of school buildings. The track has been closed and is scheduled to be removed this summer and restored by August 25, 2001.*
- **Libby Middle School:** *Like the high school, asbestos contamination has been found at the school's running track. At the asphalt capped track, asbestos concentration found in soil under the track showed between 0-2% at a depth of 0-2 inches and 2-8% at a depth of 2-24 inches. Other school locations (e.g. football field) show no asbestos. The interior inspections and reviews of all previous AHERA inspection documents showed no asbestos inside of school buildings. The track has been closed and is scheduled to be removed this summer and restored by August 15, 2001.*
- **Asa Wood Elementary and Lincoln Playground:** *No asbestos was found.*
- **Fireman's Park:** *Only one subsurface soil sample showed a trace of asbestos. More surface and subsurface soil samples are scheduled to be collected.*

EPA will publish a fact sheet and follow-up with public meeting(s) for the parents and students to convey sample results and to discuss removal actions associated with the affected schools..

Medical Testing Program: *(See the initial POLREPs for background information).*

- **Last year, ATSDR analyzed mortality statistics associated with historical asbestos exposure in Libby, Montana, during the 20-year period from 1979 to 1998. Also, ATSDR conducted free screening for eligible people potentially affected by asbestos-contaminated vermiculite in Libby. Altogether, 6,144 people were screened. On February 22, 2001, ATSDR presented the preliminary findings of the Interim Report from 1,078 participants (18%) of 6,144 participants. The findings are:**
 - *Results of medical screening to date indicate that 19 to 37% of tested participants had scarring in their chest wall. 73% of these were not associated with W.R. Grace mining or processing activities.*
 - *Mortality resulting from asbestos exposure was approximately 4,000 to 6,000% greater in Libby than an average community.*
- **ATSDR will begin the second round of medical testing for approximately 2,000 people in August, 2001.**

On-Going Projects:

- **Phase II - Residential Sampling:** *To date, most air samples at homes have been collected using a stationary air monitor located in the living areas. However, there are a couple of issues which exist with regard to both the collection technique (stationary air monitor) and the analytical technique (Transmission Electron Microscopy - TEM):*

First, a stationary monitor located in such a home is useful and appropriate for assessing the "passive" exposures of people in the home who are not engaged in the routine and special activities which generate dust (e.g. dusting, sweeping). Therefore, the first objective of this sampling effort is to measure asbestos levels in the breathing zone of individuals engaged in those activities and to compare those measurements to data collected from the co-located stationary air monitor.

Second, with regard to the analytical technique, the issue is that air samples have been historically analyzed for asbestos using the Phase Contrast Light Microscopy (PCM) method, and the current slope factor calculation for EPA's Risk Assessment is expressed in units of risk per PCM fiber per cubic centimeter of air (f/cc). It is also widely recognized that the TEM analysis is more accurate and powerful than PCM analysis. Therefore, the second objective is to analyze a series of different air samples using both TEM and PCM methods in order to derive a site-specific correlation between the two.

Finally, the third objective of this study is to utilize the data collected to derive preliminary assessments of the potential health risk to people who engage in these types of activities.

EPA has begun Phase II on March 5, 2001. Four scenarios selected for evaluation in this study and investigation are:

- *Scenario I: Routine household activities (excluding active cleaning) - 14 households have participated.*
- *Scenario II: Active house cleaning activities (dusting, sweeping, etc.) - 11 homes have participated to date;*
- *Scenario III: Simulated remodeling activities that involve direct contact or handling of vermiculite insulation - 4 homes are scheduled for scenario III. First home was completed on May 3, 2001.*
- *Scenario IV: Rototilling a home garden containing vermiculite in the soil - 1 home (Summer 2001).*

Preliminary results in Scenario I & II's of some homes showed asbestos levels in breathing zones as high as 0.04 f/cc. As expected, the preliminary results are conflicting because the light microscope cannot tell the difference between an asbestos fiber and other elongated particles in the sample; whereas the electron microscope positively identifies asbestos. A better picture of Libby residential exposure will be available when the Phase 2 program and its sample analyses are completed and we have a chance to look at all of the data (approx. 6 weeks)."

2. Enforcement

On July 18, 2000, W.R. Grace reacquired the mine and the KDC properties and immediately refused EPA access to the mine for repository and the KDC properties for cleanup. On September 14, 2000, EPA in conjunction with DOJ filed a lawsuit in the U.S. District Court in Missoula, Montana, against W.R. Grace - seeking to access the KDC properties and the mine for removal activities. As a result of the hearing (December 20, 2000) and follow-up mediation (January 25 & 29, 2000) to resolve the dispute over the access, the motion was sent back to the Missoula judge for final ruling. On March 9, 2000, the U.S. District Court in Missoula ruled in favor of the EPA to use the mine for repository and KDC properties for removal activities. On April 2, 2001, W.R. Grace & Company filed for Chapter 11 bankruptcy protection because of a rising number of asbestos-related lawsuits nationwide.

On March 30, 2001, EPA filed its complaint in Montana federal district court in Missoula to recover \$10 million that EPA has spent investigating and cleanup asbestos contamination from a vermiculite mine near Libby. The lawsuit also asked the court for declaratory judgement for any future costs expended by EPA in further investigation and cleanup at the Site.

B. Planned Removal Actions

EPA has proposed more funding to initiate removal actions which will mitigate the threat to the public health and welfare or the environment posed by the asbestos present on the KDC Properties, the Rainy Creek Road, the school tracks, the ice skating rink, and two residential properties which have no Zonolite insulation in the attic and/or walls. In general, removal activities will consist of excavation, demolition, off-site disposal (mine), and restoration.

More unexpanded vermiculite has been found in several residential areas (i.e. chicken pens, sodded areas, etc.). The soil was probably imported from the mine and used as a fill material. *A pilot removal action for the Seikie property was based on high levels of amphibole asbestos found indoors and outdoors. The contamination is believed to come from asbestos fibers carried or tracked indoors from fibrous airborne dust or on shoes/clothes that came in contact with asbestos contaminated vermiculite piles, soil, or equipment placed outdoors - not from the Zonolite insulation in the attic or walls of the home. For the Brownlee property, an asbestos-contaminated pile, which was imported from the mine, will be removed.*

In order of priority, the proposed removal actions are outlined below:

Action/Items	Planned Start Date	Planned Completion
1. Screening Plant - Hauling 90,000 cubic yards - Dismantling Long Shed - Final Restoration	April 4, 2001 May 18, 2001 June 18, 2001 October 24, 2001	November 11, 2001 July 31, 2001 July 6, 2001 November 9, 2001
2. Export Plant	April 2, 2001	July 28, 2001
3. KDC Properties: - The Flyways - The Bluff	May 23, 2001 May 23, 2001	July 25, 2001 July 25, 2001
4. Schools - Elementary School - High School Track - Middle School Track	June 6, 2001 July 6, 2001 July 30, 2001	July 17, 2001 August 21, 2001 September 13, 2001
5. Residential Areas - The Brownlee - The Seikie	June 15, 2001 May 28, 2001	July 15, 2001 October 30, 2001
6. The Rainy Creek	May 1, 2001	December 15, 2001

C. Next Steps

Working with the Burlington Northern Railroad to address high levels of asbestos airborne on the railroad tracks and loading/unloading areas where that used to transport vermiculite products in between the Export Plant and the Screening Plant.

Working with the Montana Governor, Montana DEQ, and Libby community to initiate the process for listing the Libby Asbestos Site on the National Superfund Priorities List (NPL). The listing could occur either one site including all of the Libby or as two sites with the mine and City listed separately.

Compiling analytical results from the on-going Phase II - Residential Sampling and environmental investigations to determine the need for asbestos-contaminated mitigation actions.

D. Key Issues

The residential removal as amended in this amendment does not set a precedent or constitute a nationally significant issue relating to vermiculite insulation. However, a majority of homes in Libby have Zonolite insulation containing high levels of amphibole fibers; and EPA is concerned that failure to remove Zonolite insulation in the attic and/or walls from contaminated homes may result not only in post-cleanup re-contamination indoors, but may also result in releases to the environment. Contamination from Libby vermiculite may be widespread. The Libby vermiculite was shipped to more than 200 facilities nationwide, and the insulation produced from Libby ore was placed in 900,000 to 15,000,000 homes in the U.S. Currently, there is no national policy for addressing homes having asbestos-contaminated vermiculite insulation.

V. COST INFORMATION

EXTRACURRICULAR COSTS	Planned Contribution Amount (\$'000)	Cost to Date (01/31/01) (\$'000)	Proposal ceiling (FY01) (\$'000)
1. Export Plant (PRP - Lead)			
- DOT-Volpe Oversight and Engineering	\$100,000	\$216,000	\$200,000
- Site Mobilization	\$110,000		
- Site Excavation	\$330,000		
- Demolition the Long Shed and Tunnels	-0-		
- Restoration	\$300,000		
- Settlement (Parker)	-0-		
- Transportation and Disposal of Waste/Debris (Zonolite Mine)	\$220,000		
- Analytical Support	\$275,000	\$236,000	
Subtotal	\$1,325,000	\$452,000	\$200,000
2. Screening Plant (Fund - Lead)			
- DOT-Volpe Oversight and Engineering	\$250,000	\$252,000	\$250,000
- Site Mobilization	\$180,000	\$180,000	\$100,000
- Site Excavation - River Banks	\$525,000	\$2,779,000	\$400,000
- Demolition the Long Shed and Tunnels	\$525,000	-0-	\$200,000
- Restoration	\$1,100,000	\$1,196,000	\$683,000
- Settlement (Parker)	-0-	-0-	\$1,500,000
- Transportation and Disposal of Waste/Debris (Zonolite Mine)	\$250,000	-0-	\$650,000
- Analytical Support	\$275,000	\$1,488,000	\$300,000
- Outstanding Costs from FY00			\$1,917,000
Subtotal	\$3,105,000	\$5,895,000	\$6,000,000
3. KDC Properties (Screening Plant)			
- DOT-Volpe Oversight and Engineering	-0-	-0-	\$400,000
- Site Mobilization	-0-	-0-	\$50,000
- Excavation & Restoration	-0-	-0-	\$1,300,000
- Transportation and Disposal of Waste (Zonolite Mine)	-0-	-0-	\$350,000
Subtotal	-0-	-0-	\$1,500,000

4. School Tracks and other Affected Areas			
- Preparation of Site Property	-0-	-0-	\$200,000
- Excavation of Contaminated Soil and Structures and Restoration	-0-	-0-	\$2,500,000
- Transportation and Disposal of Waste (Zonolite Mine)	-0-	-0-	\$300,000
Subtotal	-0-	-0-	\$2,500,000
5. Residential Areas			
- Residences (Brownlee)	-0-	-0-	\$100,000
- Residence (Seifkie)	-0-	-0-	\$400,000
- Other Residences	-0-	-0-	\$100,000
Subtotal	-0-	-0-	\$600,000
6. Rainy Road			
- Interim Action (Temporary Paving)	-0-	-0-	\$250,000
- Excavation	-0-	-0-	\$300,000
- Transportation and Disposal of Waste (Zonolite Mine)	-0-	-0-	\$200,000
- Restoration	-0-	-0-	\$750,000
Subtotal	-0-	-0-	\$1,500,000
Subtotal Extramural	\$4,630,000	\$6,347,000	\$12,300,000
Contingency (20%)	\$886,000	\$1,269,000	\$2,460,000
Total Extramural Costs	\$5,516,000	\$7,616,000	\$14,760,000
INTRAMURAL COSTS			
1. EPA Direct Costs	\$150,000	\$250,000	\$250,000
2. EPA Indirect Costs	\$150,000	\$250,000	\$250,000
Total Intramural Costs	\$300,000	\$500,000	\$400,000
PROJECT TOTALING	\$5,816,000	\$8,116,000	\$15,260,000

The outstanding cost from FY00 is \$2.3 million. The Action Memorandum Amendment for additional FY01's removal activities is underway.

VI. DISPOSITION OF WASTES

Since May 18, 2001, the 90,000 cubic yards of asbestos-contaminated soil and debris stockpiling at the Screening Plant has been hauled to the Zonolite mine.